

## ABSTRACT

A power control system for controlling the transmission power of a Base Station (BS) transmitter in a wireless radio network is provided. The BS transmitter transmits a signal to a Mobile Station (MS) in the wireless radio network, wherein the signal is divided into frames, each frame being further divided into Link Transmission Units (LTUs). In an exemplary embodiment the wireless radio network may be a CDMA cellular communication system. The power control systems measures the Frame Error Rate (FER) and the  $E_b/N_t$  (energy per bit to total noise density) of the signal received by the MS. In addition, the power control system measures the number of LTU errors in a frame of the signal received by the MS. The power control system then transmits a power control command from the MS to the BS transmitter based on the measured FER, number of LTU errors and  $E_b/N_t$ , instructing the BS transmitter to either increase or decrease its transmission power by a certain amount.